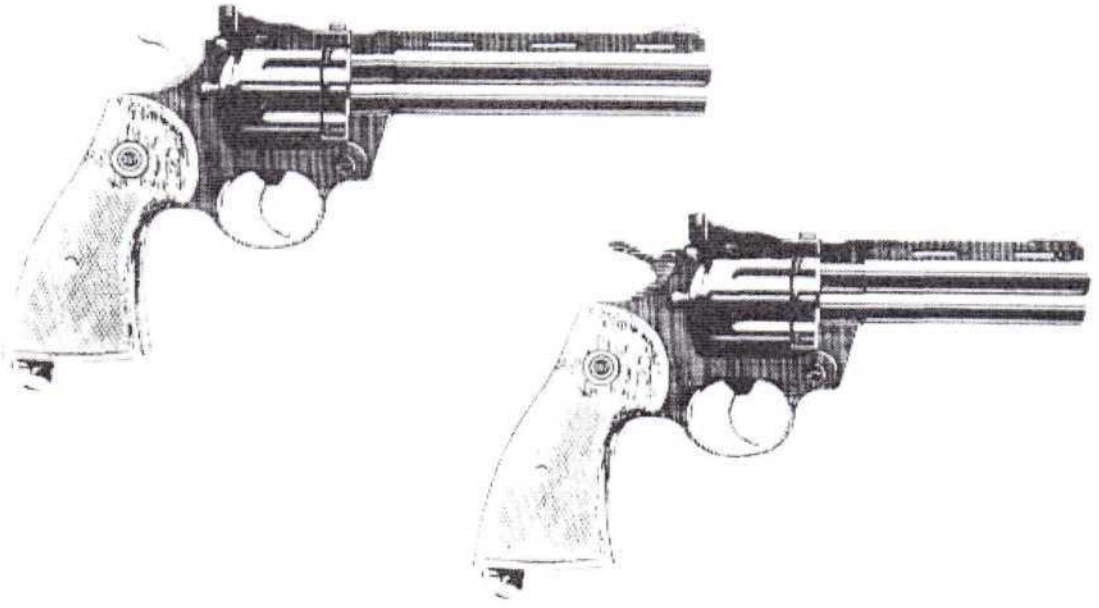
Crosman Air Guns

A Coleman Company

Factory Service Manual

Models 357SIX & 357FOUR



This manual is intended as an informational guide in servicing Crosman products. It is not instructional material and we therefore assume no responsibility for those who use same without proper factory training.

CROSMAN AIRGUNS
980 Turk Hill Road, Fairport, N.Y. 14450

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Crosman Air Guns

Model 357 Service Repair Procedures Phase I (manufacturing date 8/82)

NOTE: Safety glasses should be worn when working on all guns.

General operating instructions for this model are contained in the Owners Manual and should be read thoroughly. The detailed drawings, repair instructions and disassembly/assembly procedures must be studied carefully before any repair work is started. This will insure quicker and more precise repair of gun.

It is not always necessary to disassemble the entire gun in repair work and it is hoped that this section will assist you in diagnosis of the repair problem and will speed up repair time.

TROUBLE SHOOTING

PROBLEM I - Leaks

NOTE: Determine area of leakage in Valve & Piercing Assembly before attempting any repair work by using the following method.

1. Charge the gun with new Powerlet per instructions in Owners Manual.
2. Fire gun making sure Powerlet is putting full charge of CO_2 through Valve.
3. Pull Hammer back in single action position and put safety on to prevent accidental firing.
4. Hold muzzle end of gun down. Looking down into Frame, drop a few drops of oil down along copper Valve Tube **(357-044)** and around Valve Seal Retainer Nut **(357A043)**. Then turn gun upside down and put two to three drops of oil down along copper Valve Tube **(357-044)** and check to see if Quad Seal **(357A054)** is leaking. Also, drop a few drops of oil on Valve Seal Retainer Nut **(357A043)** on Valve Body to check for leaks.
5. From the outside of gun, drop a few drops of oil through window on copper Valve Tube **(357-044)** to check to see if Quad Seal **(357A054)** is leaking. Then turn gun upside down and place a few drops of oil around neck of powerlet and allow oil to run down on End Seal **(38-128)** to check for leaks.

POSSIBLE CAUSES	REPAIR PROCEDURES
1. Compressed or damaged End Seal **(38-128)**. Note: Damage may also be indicated if hissing sound is heard when Powerlet is pierced.	1. Remove empty Powerlet per instructions in Owners Manual. 2. Replace defective End Seal **(38-128)** by removing Guide Collar **(357-056)** with wide blade screwdriver. Note: It is not necessary to remove Side Cover **(357-002)**. 3. With a small pick or screwdriver remove End Seal and replace. 4. With End Seal removed, inspect Piercing Pin **(38A027)** for damage or wear and replace at this time. 5. When replacing Guide Collars **(357-056)**, tighten only slightly against End Seal. Note: Over tightening will cause hard piercing of Powerlet.
2. Valve Tube leaker at Piercing Body or Valve Body caused by a defective Quad Seal **(357A054)**.	1. To determine what end of Valve Tube is leaking, read Problem 1 steps 1 through 5 in Trouble Shooting. Then follow Group IX Valve & Piercing Body Assy. disassembly & assembly. 2. If leakage still exists at other end of Tube, hole in Valve or Piercing Body may have a scratch or lines in it causing Quad Seal **(357A054)** to leak. 3. If the above problem exists, it is recommended to replace Piercing Body **(357A046)** or Valve Body **(357A078)**.
3. Defective Valve Seal **(357-041)** or O-ring **(38-130)**.	1. See Disassembly & Assembly procedures Valve Assy Group X.

PROBLEM II - Low Velocity

POSSIBLE CAUSES	REPAIR PROCEDURES
1. Detent Spring **(357-037)** missing or defective causing little tension against Cylinder Detent **(357-036)**	1. Unlatch Barrel Housing Assy and check if Cylinder Detent has spring tension against it. If not, see Group VII Cylinder Plate, Cylinder Detent and Detent Spring Group.
2. Improper installation or weak Hammer Spring **(357-027)**.	1. Remove Side Cover **(357-002)** and see Group XI Hammer & Hammer Spring Group and check if spring is dislocated or damaged in any way.
3. Safety Link **(357-033)** not lining up with Valve Stem properly.	1. Pull Hammer back and look down into Frame. Continue to hold Hammer back and pull Trigger back at same time. See if Safety Link is lining up with center of Valve Stem. If not, see Group XII Trigger, Safety Link & Trigger Spring Group.

4. Guide Collar **(357-056)** is too tight causing partial piercing of Powerlet.	1. If Guide Collar is over tightened, it will cause End Seal **(38-128)** to protrude above Piercing Pin causing improper piercing of Powerlet. The Powerlet should be removed and Guide Collar should be backed-off a quarter turn.

PROBLEM III - Powerlet Inconsistent CO_2

POSSIBLE CAUSES	REPAIR PROCEDURES
1. Defective Piercing Pin **(38A027)**	1. NOTE: Piercing Pins have slanted tips. If the angle does not exist, the cookie cutter action of the Piercing Tip will deposit a small piece of metal inside Powerlet which eventually may be forced back plugging the hollow tip of piercing pin. Refer to Problem I Leaks. 2. Examine Piercing Pin **(38A027)** under magnification. Replace if necessary.
2. Guide Collar is too tight causing partial piercing of Powerlet	1. Refer to Problem III - Leaks Inconsistent CO_2.

PROBLEM IV - Gun Shooting To Right Or Left

POSSIBLE CAUSES	REPAIR PROCEDURES
1. Defective Barrel **(357-103)** or **(357-010)**	1. Refer to Group I Barrel & Barrel Housing. 2. Replace Barrel if necessary.

PROBLEM V - Cylinder Fails To Rotate

POSSIBLE CAUSES	REPAIR PROCEDURES
1. Index teeth broken off or worn on Cylinder Assy **(357-017)**	1. Open Barrel Assy. and remove Cylinder. Inspect and replace if necessary.
2. Index Finger **(357-052)** worn or not properly located on Lever **(357-051)**	1. Refer to Group V Lever & Index Finger.

PROBLEM VI - Jamming

POSSIBLE CAUSES	REPAIR PROCEDURES
1. Powerlet low on CO_2	1. Remove Barrel and push out pellets.
2. Weak or damaged Hammer Spring **(357-027)**	1. Refer to Group XI Hammer & Hammer Spring Group. Check to see if spring is dislocated or damaged in any way.
3. Defective pellets or pellets placed in Cylinder backwards	1. Inspect Pellets and advise customer. Note: Only Crosman pellets are recommended.
4. Index teeth worn or broken on Cylinder Assembly	1. See Group V Lever & Index Finger.

PROBLEM VII - Hammer Will Not Lock Back In Single Action

POSSIBLE CAUSES	REPAIR PROCEDURES
1. Trigger Sear **(357-031)** improperly located or Sear Spring **(357A029)** missing	1. Refer to Disassembly & Assembly Group VI Trigger Sear & Spring Group

PROBLEM VIII - Trigger Fails To Return Forward Or Very Little Tension

POSSIBLE CAUSES	REPAIR PROCEDURES
1.Trigger Spring **(357-057)** not located properly	1. Refer to Group XII Trigger, Safety Link & Trigger Spring Group 2. Make sure that straight long leg of Trigger Spring is properly located.

DISASSEMBLY AND ASSEMBLY

Study the drawing carefully as you read disassembly and assembly procedures and prior to disassembly of your first gun. Assembly is in reverse of disassembly, but special notations have been made throughout this section to assist in the assembly procedures.

General Information

1. Exhaust all CO_2 Gas and remove Powerlet per instructions in Owners Manual "To Exhaust CO_2 Gas".
2. Instructions are defined in assembly groups and disassembly instructions in each group are a continuation of the instructions in the previous groups.
3. All lubrication should be with Crosman Pellgunoil as regular gun oil and oil containing detergents are harmful to the Seals.

I BARREL & BARREL HOUSING GROUP

A. DISASSEMBLY

1. Press the Barrel Latch Button down and open the barrel.
2. First remove the Pellet Cylinder **(357-017)** from Shaft and inspect for broken ratchet teeth.
3. With Barrel Housing Assembly **(357-102)** or **(357-009)** open, remove Barrel Housing Screw **(357-019)** and remove the complete Barrel Housing Assembly from main unit.

4. Remove Barrel **(357-103)** or **(357-010)** from Barrel Housing **(357-100)** or **(357-003)** by taking the following steps.
   a. Push against muzzle end of Barrel and carefully slide it out of the Housing.
   b. Lift Barrel Housing Rib **(357-005)** or **(357-101)** out of Barrel Housing.
   c. Remove Barrel Latch Plate **(357-008)**.
   d. Turn Barrel Housing upside down to remove Barrel Weight **(357-055)** or **(357-059)**.
   e. Inspect all parts and replace if necessary.

B. ASSEMBLY
1. Place Barrel Weight back in Barrel Housing making sure it is properly in place.
2. Place Barrel Housing Rib into Barrel Housing.
3. Slide Barrel Latch Plate **(357-008)** as shown on drawing.
4. With small end first, slide Barrel through Barrel Latch and continue to slide Barrel into Barrel Housing all the way.
5. Place complete Barrel Housing Assembly onto main unit of gun and replace Barrel Housing Screw **(357-019)**.
6. Replace Cylinder **(357-017)** over pivot stud and close Barrel Assembly and at the same time check to see it if latches properly.

II PIERCING PIN & SEAL GROUP

A. DISASSEMBLY
1. It is not necessary to remove any other part of the gun.
2. Remove the L. H. Grip and Powerlet from gun.
3. With a large blade screw driver, remove Guide Collar **(357-056)**.
4. With a small pick or screw driver, pull out End Seal **(38-128)**.
5. Tap butt of gun on bench to drop out Piercing Pin **(38A027)** and Screen **(38-028)**.

B. ASSEMBLY
1. Turn gun up and drop Screen **(38-028)** in Piercing Body.
2. Inspect Piercing Pin **(38A027)** for any damage to piercing point before replacing.
3. Place End Seal **(38-128)** on Piercing Pin **(38A027)**. NOTE: Check for depression set, chips and for any other defect before replacing.
4. Turn Guide Collar **(357-056)** into Piercing Body). Guide Collar Should be turned down until snug. Beyond this point, the center of the End Seal **(38-128)** will protrude above the Piercing Pin **(38A027)** resulting in partial piercing of the powerlet.

III REAR SIGHT & SIDE COVER GROUP

A. DISASSEMBLY
1. Note: The Rear Sight can not be removed until the side cover is removed.
2. Remove the two (2) Frame Screws **(38-117)** and one (1) Barrel Housing Screw **(357-019)**.
3. Before removing Side Cover **(357-002)**, push safety in by pulling Hammer back slightly. Then carefully lift off Side Cover **(357-002)**.
4. Lift out Rear Sight Assembly **(357-012)** and inspect before replacing.
5. If Elevation Screw **(357-011)** needs replacing, turn out from bottom of Sight.

B. ASSEMBLY
1. With Elevation Screw turned in from bottom of Rear Sight so that it will clear Valve Body.
2. Carefully place Rear Sight Assembly down in casting properly.
3. If Side Cover does not go down against main casting properly, check for mislocated parts like Trigger Pin, Sear Pin, Piercing Body and Safety.
4. Make sure all parts are properly located then replace Side Cover **(357-002)** and replace the screws.

IV BARREL HOUSING LATCH GROUP

A. DISASSEMBLY
1. Remove Side Cover as instructed above.
2. Carefully remove Latch Support **(357-021)**.
3. Lift out Barrel Housing Latch **(357-020)**.
4. Inspect parts for damage and wear and replace if necessary.

B. ASSEMBLY
1. Locate Pivot Pin on Barrel Housing Latch in hole in casting and with hook of latch up.
2. Place Latch Support **(357-021)** on top of Cylinder Plate **(357-035)** and with tapered end under Barrel Housing Latch **(357-020)**. Note: Make sure Latch Support is located properly against Cylinder Plate **(357-035)** and casting flange.
3. Replace Side Cover **(357-002)** as instructed.

4. Now Place the two Quad Seals on each end of the Valve Tube **(357-044)**.
5. With the two Quad Ring Retainers and Quad Seals assembled on each end of the Valve Tube, as one unit, press one end in Piercing Body and one end in Valve Body as far as they will go. Note: Quad Seals must be assembled on Valve Tube and then pressed into Valve and Piercing Body. If this is not done properly, the Quad Seal will not seal themselves around Valve Tube.
6. By holding Valve & Piercing Assembly together as one unit, place in Frame as stated in #7 below.
7. With Hammer Spring **(357-027)** located on stud and under Hammer as shown on drawing, press Piercing Body Assembly against short end of Hammer Spring and into Frame. Make sure that rib in Frame is between Piercing Body & Guide Collars. Then continue to hold Valve Body Assembly against Valve Tube and place Valve Assembly in Frame making sure small tab on Valve Body is located in locating slot in Frame.

X VALVE ASSEMBLY GROUP

A. DISASSEMBLY

1. With Valve Body Assembly **(357B049)** removed from Frame, proceed to disassemble Valve Assembly as stated below.
2. Using wrench T38-11 furnished by Crosman, turn out Valve Seal Retainer Nut **(357A043)**.
3. Remove Valve Seal **(357-041)**, Valve Stem **(357-039)** and Valve Spring **(111A026)**.
4. By using a pick or hook tool, pull out Valve Washer **(357-040)** and O-ring **(38-130)**.
5. All parts, seals and O-rings should be inspected for chips, dents and for any other defects. It is recommended that Valve Seal **(357-041)** and O-ring **(38-130)** be replaced while the Valve is disassembled.

B. ASSEMBLY

1. Place O-ring **(38-130)** into Valve Body **(357A038)** in recessed area.
2. Drop in Valve Washer **(357-040)** and press down on washer to make sure O-ring **(38-130)** is properly seated.
3. Drop Valve Spring **(111A026)** in Valve Body.
4. Place Valve Stem **(357-039)** on Valve Spring.
5. Place Valve Seal **(357-041)** and Valve Seal Retainer Nut **(357A043)** over Valve Stem **(357-039)** and turn Valve Seal Retainer Nut with wrench until tight.

XI HAMMER & HAMMER SPRING GROUP

A. DISASSEMBLY

1. Pull out floating Pivot Pin **(36-012)** from Hammer Assembly **(357-030)** and locating hole in Frame.
2. Lift out Hammer Assembly **(357-030)** and inspect for damage or wear. Note: Hammer Pawl **(357-028)** and Pawl Spring **(357-042)** should work freely and should be inspected for that.
3. Remove Hammer Spring **(357-027)** from stud in Frame and should be inspected.

B. ASSEMBLY

1. Place Pivot Pin **(36-012)** in locating hole in casting.
2. Place Hammer Assembly **(357-030)** over Pivot Pin **(36-012)**.
3. Place Hammer Spring **(357-027)** over stud in Frame with long end of spring so it will press against Hammer.

XII TRIGGER, SAFETY LINK & TRIGGER SPRING GROUP

A. DISASSEMBLY

1. It is helpful to study how and where Trigger Spring **(357-057)** is located in Frame.
2. Unhook Trigger Spring **(357-057)** from boss to release tension.
3. Pull out Pivot Pin **(36-012)** from Trigger **(357-032)** and Frame.
4. Remove Trigger **(357-032)**, Trigger Spring **(357-057)** and Safety Link **(357-033)**.
5. Inspect all above parts for damage or wear.

B. ASSEMBLY

1. Place Pivot Pin **(36-012)** in locating hole in Trigger area of Frame.
2. Place Trigger Spring **(357-057)** over Pivot Pin and locate long straight end of spring between Trigger Guard and Boss Flange so that Spring will be relaxed while replacing Trigger.
3. Put short end of Safety Link **(357-033)** in hole in Trigger from right side and hold Safety Link and Trigger together as one unit. Place over Pivot Pin allowing hook part of Trigger Spring to rest against flat straight part of Trigger. Note: At this point, there should not be any tension against Trigger. (read next step)

4. Hold Trigger Assembly down and take long straight end of Trigger Spring and hook it on top of boss flange. Note: This will give you the proper tension on Trigger.

XIII PIERCING LEVER PIN, LEVER AND SCREW GROUP

A. DISASSEMBLY

1. Note: The only time this group is disassembled is when Piercing Screw **(357-015)** is broke off or damaged.
2. To remove Piercing Screw when broken at Piercing Lever take the following steps:
   a. Grind the end of screw so that all burrs or damaged threads are removed. If this is not done, you will damage the threads in the Frame **(357-016)**.
   b. Turn Piercing Screw out up through powerlet recessed opening by using a small pair of pliers or allen wrench size $\frac{7}{64}$. If there is difficulty in turning Piercing Screw out, double check to see if threads on screw are damaged. Note: A noticeable tightness will be felt when Piercing Screw is being turned out.

B. ASSEMBLY

1. Turn Piercing Screw **(357-015)** back through Frame **(357-016)**
2. Assemble Piercing Lever **(357-014)**, Piercing Lever Pin **(357-013)** to Piercing Screw **(357-015)**.
3. Place head of Lever Pin on block and pean end over.